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"Preliminary Results on Machine Classification of Soil
Associations in Collin County, Texas"

ERTS Frame Number: Subframe of the Texoma frame collected
July 25, 1972.

Run Number: 72001403 Classification Serial Number: 1107215005

Introduction

An area of about 50 square miles adjacent to and west of Lavon Reservoir in Collin County, Texas was chosen from the Texoma frame collected by the ERTS-1 satellite on July 25, 1972. The area is dissected by several creeks, including Muddy Creek, White Rock Creek, and Ticky Creek. Direct ground observations were not available, but the area was mostly covered with cotton and pasture vegetation.

Procedure

After the data from the designated study areas were reformatted, a cluster analysis (unsupervised classification in the LARSYS programs) was performed on the bands 4, 5, 6, and 7 (MSS) data from this area. Five distinct spectral categories were found. Soil boundaries from the 1969 soil survey were manually superimposed onto the resulting spectral map for the purpose of evaluating the results.

Results

Boundaries between Houston clay and Houston Black clay were generally apparent in the spectral analysis. Houston clay is more steeply sloping than the Houston Black clay and is less suitable for cultivated agriculture. Cotton is frequently grown on the Houston Black soils, whereas Houston soils are more often used as pasture.

(E72-10260) PRELIMINARY RESULTS ON MACHINE
CLASSIFICATION OF SOIL ASSOCIATIONS IN
COLLIN COUNTY, TEXAS D.A. Landgrebe, et al
(Purdue Univ.) 30 Nov. 1972 1 p CSCL 08M

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